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To Elizabeth McKenna/R10/USEPA/US@EPA, (b) (6)

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Subject Beezer PCP Info

ENFORCEMENT CONFIDENTIAL

Elizabeth, Here is the info on PCP for Beezer...Hope this helps. Let me know if you need additional info.

Pentachlorophenol (PCP) is a halogenated hydrocarbon, composed of a benzene ring to which is attached a hydroxide radical making a phenol which is then chlorinated. By-product contaminants of the process include tetrachlorophenol, hexachlorobenzene and various dioxins and furans. Hexachlorodibenzodioxin appeared in commercially produced pentachlorophenol in the United States during the 1970s in amounts ranging up to 100 parts per million.

DEQ has implemented source control measures for a PCP at the Time Oil site. Source control measures retard PCP migration and prevent PCP discharge to private storm water outfall. This includes source area pump & treat, insitu chemical oxidation, and groundwater to storm water intercept pump & treat. I'll need to follow up on whether or not the groundwater plume reached the river.

Environmental Fate:

Breakdown in soil and groundwater: PCP is moderately persistent in the soil environment, with a reported field half-life of 45 days [15]. PCP degrades most rapidly in flooded or anaerobic (airless) soils, at higher temperatures and in the presence of organic matter in the soil [12,15]. Breakdown is mainly by anaerobic biodegradation; breakdown by sunlight and hydrolysis do not appear to be significant processes [15]. It is poorly sorbed at neutral and alkaline conditions, and may be mobile in many soils [12,15]. Sorption will be slightly greater (and mobility slightly lesser) in soils with higher proportions of soil organic matter [12]. The compound has been found in groundwater in California, Oregon, and Minnesota at very low concentrations ranging from 0.06 ppt to 0.64 ppb [15].
Breakdown in water: In the water environment, PCP is mainly bound to sediments and suspended particles in water [12]. PCP will dissociate by releasing a hydrogen ion and may then be more readily degraded by sunlight or microorganisms [12]. In water, biodegradation occurs, mainly at the surface, with a half-life ranging from hours to days [12]. It does not evaporate to a significant degree. PCP has been detected at very low levels in rivers and streams (0.01 to 16 ug/L), surface water systems (1.3 to 12 ug/L), and seawater (0.02 to 11 ug/L) [12].
Breakdown in vegetation: PCP may be taken up by plants; lettuce grown on soil containing PCP contained low levels of PCP residues [12]. Uptake and accumulation varies according to plant species. PCP is strongly toxic to plants [9].

References
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(12) Howard, P. H., Ed. Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Pesticides. Lewis Publishers, Chelsea, MI, 1991.6-13
(15) Augustijn-Beckers, P. W. M., Hornsby, A. G. and Wauchope, R. D. SCS/ARS/CES Pesticide properties database for environmental decisionmaking II. Additional Compounds. Rev. Environ. Contam. Toxicol. 137:1-82, 1994.6-16

In-River Data

time oil surface sediment data.xls Time Oil River Station Map.doc

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